

REMARKS

Applicants' invention provides an earphone set which may be used, simultaneously, with two sound sources and which, in one embodiment, provides for adjustment of a volume ratio for between the sounds reproduced by an earphone from the two sources. In another embodiment there may be provided an automatic switching operation, which automatically switches the reproduced sound from a first source to a second source, when it is detected that the second source provides a sound level in excess of a predetermined value.

In the claims, the two sound sources are identified as an audio device and a portable communication terminal device.

In claim 1 there is recited "an electroacoustical transducer connected to the first plug and the second plug...". Thus, the claim recites one transducer (such as the loudspeaker 5A) which is connected both to the first plug (recited as being disconnectably connected to the audio device) and to the second plug (recited as being disconnectably connected to the portable communication terminal device). Moreover, the claim requires means between the first plug and the transducer, for controlling a level of the electric signal transmitted to the transducer.

This is illustrated by the configuration of Fig. 2, wherein speaker 5A is connected both to plug 1 and to plug 2, and wherein a means, such as change box 3 or volume adjuster 17, is connected between plug 1 and the transducer to control the level of signal transmitted

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to the transducer. Similarly, in Fig. 4, a means, such as switch 31 or change box 30, controls the level of the first signal transmitted to the speaker 5A.

In the outstanding Official Action, the Examiner rejects claim 1 (and claim 4 dependent therefrom) under 35 USC 102 over Relyea patent 4,621,372.

It is well settled that, to support a rejection of a claim under 35 USC 102, an allegedly anticipatory reference must disclose each and every one of the limitations recited in the rejected claim.

In attempting to support the rejection, the Action asserts that the reference discloses a headset with earphones 10, 12, and “first and second transceivers” 18, 20, which reads on the earphone apparatus.

However, in attempting to read the rest of the claim on the reference, the Examiner asserts that ‘372 also discloses “earphones [10, 12] in connection with the plug-in connectors [42 and 44] which reads on the claimed ‘electroacoustical transducer’”.

As shown in the following, this assertion is in error.

The claim recites “*an*” electroacoustical transducer, in the *singular*, which is “connected *to the first plug and the second plug...*” (i.e., is connected to both of the plugs). The Action asserts that the *plural earphones 10 and 12* reads on the *singular* electroacoustical transducer.

It is respectfully submitted that such an interpretation is manifestly incorrect.

The reference discloses two separate earphones 10 and 12. In reading the claim on Fig. 2, it is necessary to identify “*an* electroacoustical transducer”, that is, *one* transducer, which is connected to *two* plugs. However, in Fig. 2 which allegedly anticipates the claim, each *individual transducer* (10 or 12) is respectively connected to *only one*, single, *plug 42 or 44.*

Thus, ‘372 fails to disclose “*an* electroacoustical transducer connected to the first plug *and* the second plug”.

As such, the reference clearly fails to anticipate claim 1.

Moreover, the claim further recites that the (same) transducer converts first and second signals, transmitted via the first and second plugs, into corresponding sounds.

Again, the signal transmitted by the first plug 42 of the ‘372 reference is converted into a corresponding sound by the first transducer 10, and the signal transmitted by the second plug 44 is converted into a corresponding sound by the second transducer 12.

Thus, the reference fails to show a (single) transducer which converts signals from *two sources* into corresponding sounds.

It is accordingly respectfully submitted that the ‘372 reference fails to meet each of applicants’ limitations and, accordingly, fails to anticipate claim 1 (or claim 4 dependent therefrom).

In order still further to highlight another distinction between the recitation of claim 1

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and the art applied thereto, applicants hereby add new claim 7, identifying the means between the first plug and the transducer as being separate from the audio device and the portable communication terminal device. In other words, claim 7 explicitly identifies means 17 (or 3) of Figs. 1-2, or means 31 (or 30) as being separate from the audio device (disconnectably connected to plug 1) and separate from the portable communication terminal device (disconnectably connected to plug 2).

Thus, while it may be argued that transceivers 18 and 30 in Relyea correspond to the audio device and the portable communication terminal device in claim 7, it is clear that Relyea fails to show signal-level controlling means separate from the transceivers 18 and 30. Thus, Relyea fails to teach the signal-level controlling means in claim 7.

Accordingly, while claim 1 is patentable over the '372 reference for the reasons previously noted, new claim 7 is *a fortiori* patentable thereover as shown above. Similarly, claim 4 is patentable thereover in view of dependence on claim 1.

Reconsideration of the rejection of claims 1 and 4 under 35 USC 102 over the '372 reference is thus in order.

The Examiner further rejects claims 2, 3 and 5 under 35 USC 103(a) over the '372 reference in view of Slater US Patent 4,941,187.

The Action specifically asserts that Relyea '372 discloses the features hereinabove described with respect to claim 1, but admits that the reference fails to provide means for

detecting whether or not a call-related electric signal is outputted from the portable communication terminal device and means for disconnecting the first plug and connecting the second plug when the call-related signal is outputted. Thus, the Action relies on the '187 reference as providing a detecting means and means for disconnecting and connecting.

It is first submitted that, for the reasons set forth herein with respect to traversing the rejection of claim 1, the combination of the '372 reference with the '187 reference similarly fails to teach or suggest the structure of claim 2. That is, the two plugs of the '372 reference are clearly connected to different transducers, and no means would disconnect the first plug, e.g., 42, from the first transducer 10, and connect the second plug, 44, to transducer 10. Nothing in the '187 reference teaches or suggests such a reconnection, wherein the plug originally connected to one earphone should be connected to the other earphone.

This result is required from the prior art, however, because of the erroneous interpretation of the '372 reference. Accordingly, reconsideration of the rejection of claim 2 is in order as is withdrawal of the rejection thereof under 35 USC 103(a) over the combination of '187 and '372.

Nonetheless, applicants hereby amend claim 2 for further clarification of the nature of the invention recited therein.

Claim 2 as amended recites a first means (e.g., 34 in Fig. 4) connected to the second plug for detecting whether or not a call-related electric signal is outputted from the portable

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communication terminal device, and further recites the first means as generating a detection result signal representative of a result of said detecting.

The claim further recites a second means (e.g., 31) which is connected to the first plug, the second plug, the electroacoustical transducer and the first means, for disconnecting the first plug (e.g., 1) from the electroacoustical transducer (e.g., 5A) and connecting the second plug (e.g., 2) to the electroacoustical transducer (e.g., 5A) in response to the detection result signal generated by the first means, when the first means detects that a call-related electric signal is outputted from the portable communication terminal device.

In the Official Action, the examiner alleges that, in Slater, radio audio activity detector 102 of Fig. 2 reads on the first means, and that a priority switch 22 of Fig. 1 reads on the second means, that is, the means for disconnecting plug 1 and connecting plug 2.

In amended claim 2, the second means is clearly recited as responding to the detection result signal generated by the first means.

It is respectfully submitted that Fig. 1 of Slater clearly shows that the priority switch 22 is a manually-operated switch. Thus, it is quite clear that the priority switch 22 in Slater is operated by the user, and not in response to any signal, much less a signal generated by the first means (allegedly activity detector 102 of Slater).

A careful study of the reference fails to disclose any teaching or suggestion that switch 22 is operated by any signal generated by radio audio activity detector 102. Indeed,

the disclosure of A/C VOX element 102 of Fig. 2 of Slater reveals that OR gate 100 receives an input from detector 102 (col. 8, lines 46-47), and that the output of 102 "is also connected to a second pole of priority selector switch 22" (col. 8, lines 48-49).

However, it is quite clear that connection to a pole of a switch merely means that the signal is connected to another pole, upon operation of the switch. As the reference nowhere identifies switch 22 as being a signal controlled switch, or as having a control signal input, it is quite clear that nothing in the '187 reference would suggest to one of ordinary skill in the art that switch 22 operates to provide the switching connection thereof in response to the signal output from VOX 102

Accordingly, applicants respectfully submit that the Slater '187 reference fails to teach the second means in claim 2, as amended. Therefore, it is courteously submitted that claim 2 is patentable over Relyea and Slater. Reconsideration and withdrawal of the rejection of claim 2, and claims 3 and 5 dependent therefrom, is thus in order.

Addressing claim 6, the recitation requires (similarly to claim 1) that an electroacoustical transducer is connected to the first plug and to the second plug. Thus, the prior art fails to teach or suggest this feature for reasons previously noted and, if no other reason were identified, reconsideration of the rejection would be in order.

However, the claim includes still a further recitation, requiring means "for increasing one of levels of the first electric signal and the second electric signal transmitted to the

electroacoustical transducer while decreasing the other level."

Indeed, in the illustrative embodiment of Fig. 2, when the arm of switch 17 is moved from one end of resistor 17 to the other (whether from 17A to 17B or vice versa), the level of one of the two electric signals (e.g., the signals on lines 10 and 13) which is transmitted to transducer 5A is decreased, at the same time that ("while") the other is increased.

It should be appreciated that the term "while" as used in the claim means that the two actions occur at the same time -- i.e., that one of the signal levels is increased as (or at the same time as) the other signal level is decreased.

In rejecting claim 6, the Examiner alleges (last paragraph of page 6 of the Action) that "partial-mute switches [110a and 110b] and partial-mute gates [46a and 46b, and 116a and 116b] that enables partial muting (column 8, lines 67-68 and column 9, lines 1-58)" in the Slater reference "reads on the claimed means of increasing a signal level, while decreasing another."

Applicants courteously traverse this assertion as being unfounded and without any support in the reference.

A thorough study of the relevant disclosure shows that Slater teaches only decreasing one signal level by the various "partial muting" switches and gates, but nowhere suggests increasing the other signal level.

Thus, at col. 9, line 6, the stereo input is automatically lowered by switches 110a,b

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whenever aircraft radio or intercom voice activity is detected by VOX 102. Nothing suggests that these switches 110a,b also increase the level of the radio or intercom voice activity from VOX 102.

Similarly, at col. 9, lines 33-36, the aircraft audio is partially muted by gates 116a,b whenever microphone audio is detected. Nothing suggests that these gates 116a,b also increase the level of the microphone audio.

Moreover, at col. 9, lines 44-46, suggests that the voice level of aircraft occupants is reduced by partial mute gates 46a,b when radio transmissions are present. Nothing suggests that these gates 46a,b also increase the level of the radio transmission from VOX 102.

Accordingly, although the reference appears to disclose partially muting a signal when another signal is detected, nothing in the reference suggests increasing the level of the other signal.

From another perspective, if the “first and second signals” are viewed as the signals respectively inputted to the two partial mute switches such as 110a and 110b, it is also submitted that nothing in the reference suggests that one of the signals be increased while the other is decreased.

In that regard, it is noted that the ‘187 reference discloses, at column 6, lines 19-20, that partial-mute gates 46a and 46b have the structure of Fig. 4. Thus, the partial-mute gates 46a and 46b are identical to each other. At column 8, line 67 to column 9, line 3, the

reference discloses that partial-mute switches 110a and 110b are substantially identical to the switches 46 of Fig. 4. Finally, at column 9, lines 17-20, the reference discloses that partial-mute gates 116a and 116b are substantially identical to the switches 46 of Fig. 4.

Generally, for the two signal levels output from the partial mute gates or switches 46a,b, 110a,b and 116a,b, in order to increase one of two signal levels while decreasing the other signal level, it is necessary for the partial-mute gates 46a and 46b (110a and 110b, or 116a and 116b) in each pair to be linked with each other and that they operate in opposite directions, respectively. However, nowhere in the Slater reference is any disclosure found of such a design of the partial-mute gates in each pair.

In summary, it is respectfully submitted that the Slater reference fails to show or suggest that one of the partial-mute gates in each pair increases a signal level while the other partial-mute gate decreases another signal level. Thus, applicants courteously submit that Slater does not teach the means for increasing one of signal levels while decreasing the other signal level as recited in claim 6. Therefore, it is respectfully noted that claim 6 is patentable over the combination of Relyea and Slater.

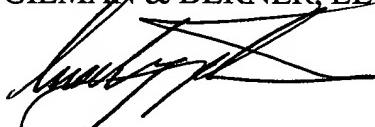
In view of the foregoing, it is respectfully submitted that each of the claims is patentable over the art applied thereto, and that the application is in condition for allowance. An early indication of the same is courteously solicited. In order to expedite resolution of any remaining issues and further to expedite passage of the application to issue, the

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Examiner is respectfully requested to contact the undersigned by telephone at the below listed local telephone number if any further comments, questions or suggestions arise in connection with the application.

Respectfully submitted,

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